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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of: Larry S. Yaeger et al.	)	
Serial No.: 09/520,206	)	Examiner: Le, Brian Q.
Filed: March 7, 2000	)	Art Unit: 2623
For: METHOD AND APPARATUS FOR ACQUIRING AND ORGANIZING INK INFORMATION IN PEN-AWARE COMPUTER SYSTEMS	)	

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August 2, 2007

CERTIFICATE OF TRANSMISSION

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Sir:

AMENDED APPEAL BRIEF

In response to the Notification of Non-Compliant Appeal Brief mailed July 9, 2007, Applicant hereby submits this Amended Appeal Brief.

REAL PARTY IN INTEREST

The real party in interest is Apple Inc. of Cupertino, California.

RELATED APPEALS AND INTERFERENCES

Applicant and its legal representatives know of no related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

STATUS OF CLAIMS

Claims 1-2, 4-18, 20-29, and 31-47 are pending in the case. Claims 1-2, 4-18, 20-29, and 31-47 stand twice rejected under 35 U.S.C. §103. The rejection of claims 1-2, 4-18, 20-29, and 31-47 is being appealed.

A copy of claims 1-2, 4-18, 20-29, and 31-47, in their current form, is attached hereto as an Appendix.

STATUS OF AMENDMENTS

No amendments have been filed since the mailing of the Office Action on September 26, 2005.

SUMMARY OF CLAIMED SUBJECT MATTER

The summary is set forth in five exemplary embodiments that correspond to independent claims 1, 16, 27, 37, and 42. Discussions about elements and recitations of these claims can be found at least at the cited locations in the specification and drawings.

Independent claim 1 is directed to a system for managing ink information in a computer system. The system includes a pen driver configured to collect and organize ink information, entered at a pen-based input tablet, into ink strokes (see p. 8 and Fig. 3,

elements 326 and 118). An ink manager receives the ink strokes, and includes an ink phrase termination engine that detects the occurrence of ink phrase termination events (see p. 8 and Fig. 3, elements 310 and 312). The ink manager stores the ink strokes of a given ink phrase into an ink phrase data structure (see pp. 8 and 11, and Fig. 3, element 332, and Fig. 5). Furthermore, in response to receiving from a client application a reference context affiliated with the un-recognized ink strokes, the ink manager associates the reference context with the unrecognized ink strokes of the ink phrase (see p. 15 and Fig. 3, element 302, and Fig. 4B).

Independent claim 16 is directed to a method for managing ink information in a computer system having a pen-based input tablet. The claimed method includes receiving ink information generated at the input tablet (see pp. 10-11 and Fig. 4A), organizing the ink information into ink strokes (see p. 11 and Fig. 4A), organizing the ink strokes into ink phrases based on one or more ink phrase termination events (see pp. 12-14 and Figs. 4A and 4B) and, in response to receiving from a client application a reference context affiliated with the un-recognized ink strokes of an ink phrase, associating that reference context with the ink strokes (see p. 15 and Fig. 4B).

Independent claim 27 is directed to a computer readable medium containing executable program instructions for organizing ink information generated at a pen-based input tablet. The program instructions include receiving ink information generated at the input tablet (see pp. 10-11 and Fig. 4A), organizing the ink information into ink strokes (see p. 11 and Fig. 4A), examining the ink information to see whether an ink phrase termination event has occurred (see pp. 12-15 and Figs. 4A and 4B), segregating the ink

strokes received prior to the occurrence of the ink phrase termination event in an ink phrase data structure (see p. 14 and Fig. 4A) and, in response to receiving from a client application a reference context affiliated with the un-recognized ink strokes of an ink phrase, associating that reference context with the ink strokes (see p. 15 and Fig. 4B).

Independent claim 37 is directed to a method for managing ink information in a computer system having a pen-based input tablet. The claimed method includes organizing ink information generated at the input table into ink phrases as defined by the occurrence of one or more ink phrase termination events (see pp. 12-15 and Figs. 4A and 4B) and, in response to receiving from a client application a reference context affiliated with the un-recognized ink strokes of an ink phrase, associating that reference context with the un-recognized ink strokes (see p. 15 and Fig. 4B).

Independent claim 42 is directed to a computer readable medium containing executable program instructions for organizing ink information generated by a pen-based input tablet. The medium includes instructions for receiving ink information generated by the input tablet (see pp. 10-11 and Fig. 4A), instructions for examining the ink information to determine whether an ink phrase termination event has occurred (see pp. 12-15 and Figs. 4A and 4B), instructions, in response to the occurrence of an ink phrase termination event, for segregating the ink information received prior to the termination event in a designated ink phrase data structure (see p. 14 and Fig. 4A) and, instructions, in response to receiving from a client application a reference context affiliated with the unrecognized ink phrase, for associating the reference context with the unrecognized ink phrase (see p. 15 and Fig. 4B).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 16, 27, 37, and 42, which otherwise meet all conditions of patentability under Title 35 of the United States Code, are unpatentable under 35 U.S.C. §103 over U.S. Patent No. 5,517,578 to Altman ("Altman") in view of U.S. Patent No. 5,682,439 to Beernink ("Beernink") where the references fail to teach or suggest (i) detecting the occurrence of ink phrase termination events, (ii) organizing ink strokes into ink phrases, or (iii) associating an un-recognized ink phrase with a client application's reference context.

Whether claims 2, 18 and 28, which otherwise meet all conditions of patentability under Title 35 of the United States Code, are unpatentable under 35 U.S.C. §103 over Beernink where the reference fails to teach or suggest an ink manager that passes the un-recognized ink strokes of an ink phrase to a client application, in response to an ink phrase termination event.

Whether claims 4, 20 and 31, which otherwise meet all conditions of patentability under Title 35 of the United States Code, are unpatentable under 35 U.S.C. §103 over Beernink where the reference fails to teach or suggest appending a reference context received from a client application to a designated ink phrase data structure.

Whether claims 33 and 47, which otherwise meet all conditions of patentability under Title 35 of the United States Code, are unpatentable under 35 U.S.C. §103 over Beernink where the reference fails to teach or suggest returning the reference context to the client application along with one or more recognition hypotheses.

ARGUMENT

Legal Standard

In rejecting claims under 35 U.S.C. §103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See, e.g., In re Rijckaert, 9 F.3d 1531, 1532 (Fed. Cir. 1993). As recently pronounced by the Supreme Court, although the teaching-suggestion-motivation (TSM) test for combining known elements is not inconsistent with Graham v. John Deer Co., 383 U.S. 1 (1966), a rigid application of the TSM test is. KSR Int'l Co. v. Teleflex Inc., 550 U.S. ___, 127 S. Ct. 1724 (2007). The KSR Court favored a "functional approach" to the question of obviousness. For example, where the claimed invention is merely the combination of known elements operating according to their established functions, and the market, design community or prior patents provide an apparent reason to combine the known elements in the recited manner, the invention is likely to be obvious. Id. The KSR Court also reiterated that fact finders must remain vigilant to the problem of "hindsight bias" when evaluating the obviousness of a claimed invention. Id.

The claims on appeal do not stand or fall together. Instead, Applicant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.F. §41.37(c)(1)(vii).

Claims 1, 16, 27, 37 and 42

Claim 1

Claim 1 recites in relevant part:

> "A system for managing ink information in a computer system having a pen-based input tablet, the system comprising:"
>
> "an ink manager coupled to the pen driver for receiving the ink strokes, the ink manager having an ink phrase termination engine configured to examine the ink information collected by the pen driver and, upon detecting the occurrence of an ink phrase termination event, to identify a respective end of an ink phrase to the ink manager," and
>
> "the ink manager stores the ink strokes received prior to the ink phrase termination event in a selected ink phrase data structure and, in response to receiving from the client application a reference context affiliated with the unrecognized ink strokes of the ink phrase, associates the reference context with the ink strokes."

The Office Action, at pp. 3-4, contends that Altman, at Col. 8, lines 55-67, teaches or suggests an ink phrase termination engine, and that, at Col. 16, lines 5-12, Altman teaches and suggests detecting the occurrence of ink phrase termination events to identify an end of an ink phrase. Applicant respectfully disagrees.

Altman describes a pen-based computer that allows the user to seamlessly switch between a word processing mode, where the ink strokes being entered by the user represent words, and a drawing mode, where the ink strokes correspond to drawings rather than words. See Abstract. When operating in word processing mode, all ink strokes received by the device are passed to the writing layer, which attempts to recognize what the user is writing. See Col. 5, lines 32-34 ("All strokes that can be processed by the writing layer are sent to the writing layer"). At the writing layer, the ink strokes are organized (not into phrases), but into lines. The term "line", moreover, corresponds to the lines on a sheet of paper. See Col. 6, lines 27-29 ("the ink strokes are grouped into or associated with lines as noted in step 61. A line operates just as a normal writing line on a ruled

sheet or (sic) of paper"). The writing layer then attempts to recognize the words formed by the ink strokes of a given line. See Col. 8, lines 17-20 ("the word parsing method begins at step 251 by sorting the strokes associated with a line in left-to-right order based on the left most point in the stroke"). Thus, one of the objects of Altman is to segregate ink strokes into lines (where the lines correspond to the lines on a piece of paper), and to apply recognition analysis to the ink strokes making up each line.

Applicant respectfully submits that Altman fails to teach or suggest an ink phrase termination engine, or to establish that an ink phrase termination engine is a known element. In particular, as shown above, Altman is concerned with determining what ink strokes belong on the same line, not which ink strokes belong to any particular phrase. Indeed, the word "phrase" nowhere appears in Altman.

The first excerpt of Altman on which the Office Action relies, namely Col. 8, lines 55-67, describes Altman's character recognition algorithm. It has nothing to do with an ink phrase termination engine configured to detect the occurrence of an ink phrase termination event. In particular, Col. 8, lines 55-67 of Altman, states that:

> "These calculations [i.e., the calculations of the average width of a character, the average calculated distance between adjacent character center points, the average calculated space between characters, and the average calculated space between words] are preferably computed using fuzzy logic. Fuzzy membership functions are practically expressed using a trapezoid function of four points. The first point (point 1) indicates where the membership is false, the second point (point 2) indicates where it transitions to completely true, the third point (point 3) indicates where it ends being completely true, and the fourth point (point 4) indicates where it transitions to false. A trapezoid can describe typical situations given the placement of the points. If the first and second points are effectively negative infinity, then a value below the third point is always true. If the third and fourth points are effectively positive infinity, then any value above the second point is always true.

In other words, Altman is not talking about ink strokes at all. Instead, Altman is talking about the subsequent processing that takes place after the ink strokes have been recognized as characters and words. There is no teaching or suggestion of an ink phrase termination engine configured to detect the occurrence of an ink phrase termination event, and thus Altman fails to establish that such an element is a known element.

The second excerpt from Altman, i.e., Col. 16, lines 5-12, similarly fails to disclose Applicant's invention. This excerpt deals with the manner of distinguishing between line-type elements (shown in Fig. 9A) from shape-type elements (shown in Fig. 9B), while the user is in drawing mode. More specifically, the excerpt states that:

> "In order to determine whether a stroke is a line type [see element 186, Fig. 9B] or a shape type [see element 180, Fig. 9A] the present method compares the beginning and ending points of the stroke with the bounding box for the stroke. If the beginning point and ending points are within a predetermined distance of the opposite corners of the bounding box the stroke is a line type element. The present invention preferably selects the predetermined distance to be a percentage of L and W for each corresponding side of the bounding box. In addition a minimum value must be met if L and W are unusually large."

Here again, there is no disclosure by Altman of any ink phrase termination engine that detects the occurrence of an ink phrase termination event. Instead, this excerpt discloses a way of determining whether one particular ink stroke is a shape or line, while the user is in drawing mode.

In contrast, claim 1 specifically recites an ink phrase termination engine that detects the occurrence of an ink phrase termination event. When such an event is detected, the ink phrase termination engine notifies the ink manager causing it to store the ink strokes corresponding to that particular ink phrase in their own ink phrase data structure.

In this way, ink strokes corresponding to different ink phrases are organized separately from each other. Altman fails to provide any such teaching or suggestion, or to demonstrate that such an element is merely a well-known element to one skilled in the art.

In addition to reciting an ink phrase termination engine, claim 1 also recites that the ink manager receives a "reference context" from the client application and associates the received "reference context" with the **un-recognized** ink strokes. A description of a preferred "reference context" may be found in the Specification at p. 15, lines 4-15.

The Office Action, at p. 4, contends that Beernink, at FIGS. 5-7 and Col. 12, line 65 to Col. 13, line 5, teaches or suggests the association of a reference context from a client application with the un-recognized ink strokes of an ink phrase. In particular, the Office Action cites to Beernink's pop-up corrector 168, as shown in Fig. 5, as purportedly teaching a reference context. Again, Applicant respectfully disagrees.

Beernink describes a mechanism for allowing a user of a pen-based computer to correct inputs that the computer recognized incorrectly. According to Beernink's mechanism, the recognition results, e.g., the word the recognizer thinks the user entered, is displayed in a correction box for examination by the user. With the proposed word in the correction box, the user can make changes, e.g., removing letters mistakenly added, splitting the recognized "word" into multiple words, etc.

First, claim 1 recites that the reference context is **received from the client application**. In contrast, Beernink's pop-up window 168 and alternates 170 are generated by the handwriting recognition software. Second, claim 1 further recites that the "reference context" is affiliated with **un-recognized ink strokes**. As clearly shown in Figs. 5-7 of

Beernink, the ink strokes have already been recognized and several alternative recognition hypotheses have been presented to the user. For example, as clearly shown in Figs. 5 and 6, Beernink's recognition software has performed its recognition analysis on the ink information entered by the user, and has presented the following alternative hypotheses to the user:

Correct
correct
Currect
Cwrect
currect

Clearly, these alternative hypotheses could not have been produced on "un-recognized" ink strokes.

Indeed, Beernink acknowledges as much at Col. 10, lines 17-30, where he states:

> FIG. 5 illustrates a response of the boxed input correction system to the selected word 164 being selected to invoke a pop-up corrector 168 in accordance with one embodiment of the present invention. The pop-up corrector 168 provides an alternates list 170, an ink word 172, a keyboard button 174, and a boxed input corrector (BIC) selector button 176. The alternates list 170 provides the user with some character strings which the **recognition software** believes are close matches for the ink word 172. The ink word 172 represents the original strokes which comprised the word which the user entered. Selecting the keyboard button 174 will display a keyboard window. Once the keyboard window is displayed, the user can select desired characters from the keyboard via the stylus 110.

Thus, Beernink's pop-up corrector 168 is not a reference context associated with un-recognized ink strokes. Instead, to the contrary, it displays recognition results.

Col. 12, line 65 to Col. 13, line 5 of Beernink, on which the Office Action also relies, similarly fails to teach or suggest the association of un-recognized ink strokes with a reference context from a client application, or to establish that such an association is a

known element. This excerpt of Beernink, in which the ink strokes entered by the user are displayed back to the user, makes no mention of a reference context being received from a client application, nor does it mention associating that reference context with any un-recognized ink strokes. This excerpt in its entirety states as follows:

> In this example, the ink word is centered within the boxed input corrector 180 and sized such that the whole ink word is visible therein. In a way, the ink word is a single unrecognized character displayed in a single box. In the illustrated embodiment, a 'recognize' button 290 is displayed within the boxed input corrector. When the user selects the recognize button 290, the recognition software will process the ink word in order to produce a string of one or more well defined characters.

As shown, this excerpt from Beernink, which references FIG. 11, teaches that the ink information entered by the user may be displayed in a box along with a button (290) which, if selected, triggers recognition of that ink information. There is no teaching or suggestion in this excerpt of a reference context being associated with un-recognized ink strokes. Accordingly, Beernink fails to support a conclusion that this limitation is merely a known element.

Because Altman fails to teach or suggest, among other things, an ink phrase termination engine that detects the occurrence of an ink phrase termination event, or the storing of ink information in a selected ink phrase data structure, or to establish that such limitations are known elements to one skilled in the art, the obviousness rejection of claim 1 based on Altman should be reversed. In addition, because Beernink fails to teach or suggest, among other things, the association of a reference context from a client application with un-recognized ink strokes, or to establish that this limitation is merely a

known element, the obviousness rejection of claim 1 based on Beernink should be reversed.

Claim 16

Method claim 16, in relevant part, recites:

> "organizing the ink strokes into one or more ink phrases as defined by one or more ink phrase termination events", and
>
> "in response to receiving a reference context from a client application affiliated with the un-recognized ink strokes of the ink phrase, associating the reference context with the ink strokes".

In other words, as with claim 1, ink strokes are organized into one or more ink phrases based upon the occurrence of one or more ink phrase termination events.

In rejecting this claim, the Office Action, at pp. 8-9, cites to Col. 6, lines 53-63 and to Col. 16, line 5 of Altman as purportedly teaching or suggesting the organization of ink strokes into ink phrases as defined by one or more ink phrase termination events. Applicant respectfully disagrees.

At Col. 6, lines 53-63, Altman states that:

> "The preferred process begins in step 71 by retrieving the first stroke in chronological order. Next, the bounds of the stroke are determined in step 72. In step 73, the old stroke is defined to be the new stroke just retrieved, and the old stroke is added to the chained group in step 74. The present invention first divides the strokes into chained groups, and then associates all the strokes in a chained group with a line. Next, in step 75, the system test whether there are any more strokes to process. If not the chained group is complete, the strokes form a chained group, and the process jumps to step 80."

As shown, this excerpt describes the grouping of ink strokes in terms of lines. The excerpt thus confirms that Altman teaches the collection of all ink strokes that appear on any given line, whether or not those ink strokes happen to correspond to numerous ink

phrases. Altman's line-based organization model provides no disclosure of organizing ink strokes in terms of ink phrases, several of which may occur on a single line, or the creation of ink phrase termination events to help in separating one ink phrase from another.

Furthermore, as demonstrated above in connection with claim 1, the excerpt from Altman at Col. 16, line 5 similarly fails to teach or suggest the organization of ink strokes into ink phrases based on ink phrase termination events.

With regard to claim 16's step of "in response to receiving a reference context from a client application affiliated with the un-recognized ink strokes of the ink phrase, associating the reference context with the ink strokes", the Office Action, at p. 9, simply refers back to its rejection of claim 1.

Claim 27

Like the previously discussed independent claims, claim 27, which is directed to a computer readable medium, recites program instructions for:

> "examining the ink information to determine whether an ink phrase termination event has occurred",
>
> "in response to the occurrence of an ink phrase termination event, segregating the ink strokes received prior to the termination event in a designated ink phrase data structure", and
>
> "in response to receiving a reference context from the client application affiliated with the un-recognized ink strokes of the ink phrase, associating the reference context with the ink strokes".

In rejecting this claim, the Office Action, at p. 10, simply refers back to its rejections of claims 1, 16 and 17.

Claim 37

Claim 37 is directed to a method for managing ink information in a computer system, and recites, among other things:

> "organizing ink information generated at the input tablet into one or more ink phrases, whereby each ink phrase is defined by an occurrence of one or more predetermined ink phrase termination events", and
>
> "in response to receiving a reference context from a client application affiliated with an un-recognized ink phrase, associating the reference context with the un-recognized ink phrase".

In rejecting this claim, the Office Action, at p. 10, simply refers back to its rejection of claim 1.

Claim 42

Claim 42 is directed to a computer readable medium containing executable program instructions for organizing ink information generated by a pen-based input tablet. The executable program instructions include, in relevant part, instructions for:

> "examining the ink information to determine whether an ink phrase termination event has occurred",
>
> "in response to the occurrence of an ink phrase termination event, segregating the ink information received prior to the termination event in a designated ink phrase data structure", and
>
> "in response to receiving a reference context from the client application affiliated with the un-recognized ink phrase, associating the reference context with the un-recognized ink phrase".

In rejecting this claim, the Office Action, at p. 10, simply refers back to its rejection of claims 1, 2, 4, 8, 12, 13, 17, 21 and 38.

As set forth above, Altman, which is limited to associating ink strokes in terms of lines on a sheet of paper, fails to teach or suggest determining whether an ink phrase termination event has occurred, or segregating ink strokes corresponding to a given ink phrase into an ink phrase data structure. It likewise fails to establish that this is known by one skilled in the art. Furthermore, Beernink fails to teach or suggest the association of a reference context with the un-recognized ink strokes of an ink phrase. Because the references fail to teach or suggest (i) detecting the occurrence of ink phrase termination events, (ii) organizing ink strokes into ink phrases, or (iii) associating an un-recognized ink phrase with a client application's reference context, or to show that such limitations are known elements, the rejection of independent claims 1, 16, 27, 37 and 42 as being obvious should be reversed.

Claims 2, 18, 28

Claim 2

Claim 2, which depends from claim 1, recites:

> "the ink manager, in response to the occurrence of an ink phrase termination event, is configured to pass the un-recognized ink strokes of the respective ink phrase to the client application".

The Office Action, at p. 5, cites to Col. 5, lines 66-67 and FIG. 5 of Beenink as teaching or suggesting this claim limitation. Applicant respectfully disagrees.

This excerpt from Beenink states as follows:

> The display system 16 further includes an ASIC 56, a dedicated SRAM 58, and an LCD screen 60.

As shown, the cited excerpt from Beernink fails to provide any teaching or suggestion for passing to a client application un-recognized ink strokes that correspond to a respective ink phrase. There is no mention anywhere in the cited excerpt of "an ink phrase termination event", nor is there any mention of passing "un-recognized ink strokes of [a] respective ink phrase to [a] client application". Instead, this excerpt from Beernink recites what hardware components make up Beernink's display system namely, an Application Specific Integrated Circuit (ASIC), a Synchronous Random Access Memory (SRAM) and a Liquid Crystal Display (LCD) screen.

FIG. 5, as described above, displays alternate recognition hypotheses to the user, and provides no teaching or suggestion for responding in any manner to ink phrase termination events.

Claims 18 and 28

Like claim 2, claim 18, which depends ultimately from independent claim 16, and claim 28, which depends from independent claim 27, each recite:

> "passing the un-recognized ink strokes of the respective ink phrase to the client application in response to the ink phrase termination event".

In rejecting these two claims, the Office Action, at pp. 9 and 10, simply refers back to the rejection of claim 2. As shown above, the cited excerpt provides no teaching or suggestion of this claim limitation.

Because Beernink fails to teach or suggest an ink manager that passes the un-recognized ink strokes of an ink phrase to a client application, in response to an ink

phrase termination event, the obviousness rejection of claims 2, 18 and 28 should be reversed.

Claims 4, 20, 31

Claim 4

Claim 4, which depends from claim 1, recites:

> "wherein the ink manager associates the reference context with the un-recognized ink strokes by appending the reference context to the selected ink phrase data structure".

The Office Action, at p. 5, cites to FIG. 9, element 262 of Beernink as purportedly teaching or suggesting this claim limitation. Applicant respectfully disagrees.

Beernink's Fig. 9 is a flow chart of a display method. See Beernink, Col. 12, lines 39-42. Step 262, on which the Office Action relies, teaches the presentation of alternate recognition hypotheses. In particular, step 262 suggests that the alternate case of the current character, i.e., either upper case or lower case, should be presented as an alternative recognition hypothesis. See Col. 13, lines 50-54 (noting that upper case "A" is an alternative hypothesis to lower case "a").

As shown, this excerpt from Beernink teaches a technique for providing alternate recognition hypotheses. It does not provide any teaching or suggestion for appending a reference context to the un-recognized ink strokes of a selected ink phrase.

Claims 20 and 31

Like claim 4, claim 20, which ultimately depends from independent claim 16, and claim 31, which depends from independent claim 27, each recite:

"wherein the reference context is associated with the respective ink phrase by appending the reference context to the designated ink phrase data structure".

In rejecting these two claims, the Office Action, at pp. 9 and 10, simply refers back to its earlier rejections.

As shown above, Beernink fails to teach or suggest appending a reference context received from a client application to a designated ink phrase data structure. Accordingly, the rejection of claims 4, 20 and 31 as obvious based on Beernink should be reversed.

Claims 33, 47

Claim 33, which ultimately depends from independent claim 27, and claim 47, which ultimately depends from independent claim 42, each recite:

"in response to a request from the client application, returning the reference context to the client application along with the one or more recognition hypotheses".

In rejecting claim 33, the Office Action, at p. 10, simply refers back to its rejection of claims 19 and 21. The Office Action, however, provides no discussion of claim 19, as that claim was canceled by the Applicant. The rejection of claim 21, merely refers back to the rejection of claims 8 and 14.

In the rejection of claim 8, the Office Action, at p. 6, contends that Beernink teaches or suggests ink strokes being passed to a handwriting recognition manager. In the rejection of claim 14, the Office Action, at p. 8, contends that Beernink teaches a handwriting recognition manager that receives a recognition context and directs a handwriting recognition engine to utilize the recognition context in generating the hypotheses.

However, this is not what is recited by claims 33 and 47. As set forth above, claims 33 and 47 recite that the reference context is returned to the client application

along with one or more recognition hypotheses. Nowhere does the Office Action point to any portion of either Altman or Beernink as purportedly teaching or suggesting this limitation. There is no mention whatsoever of this particular limitation in the Office Action's discussion of claims 8 or 14. Instead, that part of the Office Action limits its discussion to the elements recited in those claims.

Because Beernink fails to teach or suggest returning the reference context to the client application along with one or more recognition hypotheses, the rejection of claims 33 and 47 as obvious based on Beernink should be reversed.

CONCLUSION

Applicant respectfully submits that the claims are allowable over the art of record. Accordingly, Applicant requests that the rejection of all claims be reversed.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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CLAIMS APPENDIX
(Claims on Appeal in Appl. Ser. No. 09/520,206)

1. A system for managing ink information in a computer system having a pen-based input tablet, the system comprising:

a pen driver coupled to the pen-based input/display tablet and configured to collect and organize the ink information entered at the pen-based input tablet into ink strokes;

an ink memory area organized into one or more ink phrase data structures; and

an ink manager coupled to the pen driver for receiving the ink strokes, the ink manager having an ink phrase termination engine configured to examine the ink information collected by the pen driver and, upon detecting the occurrence of an ink phrase termination event, to identify a respective end of an ink phrase to the ink manager,

whereby the ink information entered at the pen-based input tablet is associated with a client application, and

the ink manager stores the ink strokes received prior to the ink phrase termination event in a selected ink phrase data structure and, in response to receiving from the client application a reference context affiliated with the un-recognized ink strokes of the ink phrase, associates the reference context with the ink strokes.

2. The system of claim 1 wherein

the ink manager, in response to the occurrence of an ink phrase termination event, is configured to pass the un-recognized ink strokes of the respective ink phrase to the client application.

3. (Canceled)

4. The system of claim 1 wherein the ink manager associates the reference context with the un-recognized ink strokes by appending the reference context to the selected ink phrase data structure.

5. The system of claim 2 wherein the ink phrase termination engine is configured to initiate a time-out for each ink stroke and further wherein the termination engine identifies the occurrence of an ink phrase termination event when the time-out expires before the next sequential ink stroke is detected.

6. The system of claim 5 wherein the time-out has a value that is settable by a user of the computer system.

7. The system of claim 5 wherein the pen-based input tablet has a surface and the ink information generated by the tablet includes out-of-proximity data corresponding to the pen being lifted above the surface of the tablet, and further wherein the termination engine detects the occurrence of an ink phrase termination event upon detecting out-of-proximity data from the tablet.

8. The system of claim 2 further comprising:

one or more handwriting recognition engines for generating hypotheses based on the ink information entered at the pen-based tablet; and

a handwriting recognition manager coupled to both the ink manager and the one or more handwriting recognition engines, the handwriting recognition manager configured and arranged to coordinate operation of the one or more handwriting recognition engines, wherein

the ink strokes received at the ink manager are passed to the handwriting recognition manager, and

the ink manager notifies the handwriting recognition manager of the occurrence of each ink phrase termination event and, in response, the handwriting

recognition manager directs a selected handwriting recognition engine to generate one or more hypotheses for the ink strokes corresponding to the respective ink phrase.

9. The system of claim 8 wherein the handwriting recognition manager in cooperation with the selected handwriting recognition engine employs a word segmentation model to the ink strokes as they are received by the ink manager and, in response to determining that a given ink stroke represents a new word, is permitted to issue an ink phrase termination signal to the ink manager.

10. The system of claim 8 wherein

the client application is configured to define at least one data entry field for display on the tablet and to establish corresponding boundary coordinates for the at least one data entry field, and

the termination engine identifies the occurrence of an ink phrase termination event when an ink stroke or portion thereof is outside of the boundary coordinates for the at least one data entry field.

11. The system of claim 8 wherein the one or more hypotheses are provided to the client application.

12. The system of claim 8 wherein the ink manager

in response to receiving from the client application a reference context affiliated with the un-recognized ink strokes of the ink phrase, associates the reference context with the ink strokes, and

in response to a request by the client application, returns the affiliated reference context to the client application together with the one or more hypotheses.

13. The system of claim 8 wherein, in response to receiving an indication that the client application has consumed the un-recognized ink strokes, the ink manager directs the handwriting recognition manager not to generate one or more hypotheses for the ink strokes.

14. The system of claim 8 wherein

in response to receiving the un-recognized ink strokes, the client application establishes a corresponding recognition context for the ink strokes, and

the handwriting recognition manager receives the recognition context and directs the selected handwriting recognition engine to utilize the recognition context in generating the one or more hypotheses.

15. The system of claim 14 wherein the one or more hypotheses generated by the selected handwriting recognition engine utilizing the recognition context from the client application are provided to the client application.

16. A method for managing ink information in a computer system having a pen-based input tablet that may include an integrated display for generating ink information as a pen is moved across the tablet, the method comprising the steps of:

receiving the ink information generated by the input tablet;

organizing the ink information into corresponding ink strokes;

organizing the ink strokes into one or more ink phrases as defined by one or more ink phrase termination events; and

in response to receiving a reference context from a client application affiliated with the un-recognized ink strokes of the ink phrase, associating the reference context with the ink strokes.

17. The method of claim 16 wherein the step of organizing the ink strokes into one or more in phrases comprises the steps of:

examining the ink information to determine whether an ink phrase termination event has occurred; and

in response to the occurrence of an ink phrase termination event, segregating the ink strokes received prior to the termination event in a designated ink phrase data structure.

18. The method of claim 17 further comprising the step of passing the un-recognized ink strokes of the respective ink phrase to the client application in response to the ink phrase termination event.

19. (Canceled).

20. The method of claim 17 wherein the reference context is associated with the respective ink phrase by appending the reference context to the designated ink phrase data structure.

21. The method of claim 17 further comprising the steps of:

generating one or more recognition hypotheses for the ink strokes of the ink phrase data structure; and

passing the one or more recognition hypotheses to the client application together with the respective reference context.

22. The method of claim 17 wherein the ink information from the input tablet further includes out-of-proximity data which corresponds to the pen being lifted above a surface of the tablet, the method further comprising the steps of:

examining the ink information to detect out-of-proximity data;

identifying the occurrence of an ink phrase termination event in response to detecting out-of-proximity data.

23. The method of claim 17 wherein the client application defines a form for display on the tablet, the form having one or more data entry fields for receiving handwritten information, the method further comprising the steps of:

receiving a set of bounding coordinates established by the client application for the one or more data entry fields;

comparing the ink information from the input tablet with the bounding coordinates of the one or more data entry fields; and

identifying the occurrence of an ink phrase termination event in response to detecting ink information moving outside of the bounding coordinates for at least one of the one or more data entry fields.

24. The method of claim 17 wherein the computer system includes at least one recognition engine, the method further comprising the steps of:

configuring the recognition engine to apply a word segmentation model to the ink strokes as they are organized; and

identifying the occurrence of an ink phrase termination event when the word segmentation model determines that a given ink stroke is part of a new word relative to an immediately prior ink stroke.

25. The method of claim 17 further comprising the steps of:

initiating a time-out mechanism upon receipt of each ink data point; and

identifying the occurrence of an ink phrase termination event when the time-out expires prior to receiving a next sequential ink data point.

26. The method of claim 25 wherein the ink information from the input tablet further includes out-of-proximity data which corresponds to the pen being lifted above a surface of the tablet, the method further comprising the steps of:

examining the ink information to detect out-of-proximity data;

identifying the occurrence of an ink phrase termination event in response to detecting out-of-proximity data.

27. A computer readable medium containing executable program instructions for organizing ink information that is generated by a pen-based input tablet as a pen moves across the tablet and is associated with a client application, the executable program instructions comprising program instructions for:

receiving the ink information generated by the input tablet;

organizing the ink information into corresponding ink strokes;

examining the ink information to determine whether an ink phrase termination event has occurred;

in response to the occurrence of an ink phrase termination event, segregating the ink strokes received prior to the termination event in a designated ink phrase data structure; and

in response to receiving a reference context from the client application affiliated with the un-recognized ink strokes of the ink phrase, associating the reference context with the ink strokes.

28. The computer readable medium of claim 27 further comprising program instructions for passing the un-recognized ink strokes of the respective ink phrase to the client application in response to the ink phrase termination event.

29. The computer readable medium of claim 28 further comprising program instructions for, in response to receiving an indication that the client application has consumed the un-recognized ink strokes, blocking recognition of the ink strokes.

30. (Canceled)

31. The computer readable medium of claim 27 wherein the reference context is associated with the ink strokes by appending the reference context to the designated ink phrase data structure.

32. The computer readable medium of claim 27 further comprising program instructions for:

generating one or more recognition hypotheses for the ink strokes of the ink phrase data structure; and

passing the one or more recognition hypotheses to the client application.

33. The computer readable medium of claim 32 further comprising program instructions for:

in response to a request from the client application, returning the reference context to the client application along with the one or more recognition hypotheses.

34. The computer readable medium of claim 32 wherein the client application establishes a recognition context in response to receiving the un-recognized ink strokes of the ink phrase and the program instructions from generating one or more recognition hypotheses further comprise program instructions for utilizing the recognition context established by the client application.

35. The computer readable medium of claim 27 wherein the program instructions for examining comprise program instructions for:

initiating a time-out mechanism upon receipt of each ink data point; and

identifying the occurrence of an ink phrase termination event when the time-out expires prior to receiving a next sequential ink data point.

36. The computer readable medium of claim 35 wherein the ink information further includes out-of-proximity data which corresponds to the pen being lifted above a surface of

the tablet, and the program instructions for examining further comprise program instructions for:

examining the ink information to detect out-of-proximity data;

identifying the occurrence of an ink phrase termination event in response to detecting out-of-proximity data.

37. A method for managing ink information in a computer system having a pen-based input tablet and a display for generating ink information as a pen is moved across the tablet, the method comprising:

organizing ink information generated at the input tablet into one or more ink phrases, whereby each ink phrase is defined by an occurrence of one or more predetermined ink phrase termination events; and

in response to receiving a reference context from a client application affiliated with an un-recognized ink phrase, associating the reference context with the un-recognized ink phrase.

38. The method of claim 37 wherein the reference context is either a tag generated by the client application for client-based identification, or a pointer to a data structure containing client-related information.

39. The method of claim 38 wherein the organizing ink information comprises:

examining the ink information to determine whether an ink phrase termination event has occurred; and

in response to the occurrence of an ink phrase termination event, segregating the ink information received prior to the termination event in a designated ink phrase data structure.

40. The method of claim 39 wherein the reference context is associated with the respective ink phrase by appending the reference context to the designated ink phrase data structure.

41. The method of claim 39 further comprising:

generating one or more recognition hypotheses for the ink information of the ink phrase data structure; and

passing the one or more recognition hypotheses to the client application together with the respective reference context.

42. A computer readable medium containing executable program instructions for organizing ink information that is generated by a pen-based input tablet as a pen moves across the tablet and is associated with a client application, the executable program instructions comprising program instructions for:

receiving the ink information generated by the input tablet;

examining the ink information to determine whether an ink phrase termination event has occurred;

in response to the occurrence of an ink phrase termination event, segregating the ink information received prior to the termination event in a designated ink phrase data structure; and

in response to receiving a reference context from the client application affiliated with the un-recognized ink phrase, associating the reference context with the un-recognized ink phrase.

43. The computer readable medium of claim 42 wherein the reference context is either a tag generated by the client application for client-based identification, or a pointer to a data structure containing client-related information.

44. The computer readable medium of claim 43 further comprising program instructions for passing the ink information of the respective un-recognized ink phrase to the client application in response to the ink phrase termination event.

45. The computer readable medium of claim 44 further comprising program instructions for, in response to receiving an indication that the client application has consumed the un-recognized ink phrase, declining to perform recognition of the ink information.

46. The computer readable medium of claim 42 further comprising program instructions for:

generating one or more recognition hypotheses for the ink information of the ink phrase data structure; and

passing the one or more recognition hypotheses to the client application.

47. The computer readable medium of claim 46 further comprising program instructions for in response to a request from the client application, returning the reference context to the client application along with the one or more recognition hypotheses.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.